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## Algoma Ore: The Helen and Magpie Iron Mines

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By James Shefchik

The Helen and Magpie mines are situated to the north, northeast of Wawa, Ontario inland from the eastern shore of Lake Superior, about 279 km north of Sault Sainte Marie, Ontario. The Helen mine site is roughly 6 km (about 4 miles) from Wawa up Mine Road. The Magpie mine is situated up the Michipicoten River about 24 km (15 miles) from Wawa. The Magpie Mine site is accessible via boat from the Steephill Falls dam, with a short overland traverse to the mine site or alternatively via bush road.

The discovery and development of the Helen and Magpie mines not only fueled a steel industry in Sault Ste. Marie, Ontario, it also spurred the development of a number of hydroelectric power projects in Sault Sainte Marie and Wawa. High grade iron ore as well as beneficiated or refined lower grade ores from these mines furnished most of the native ore that fed Canadian production of steel during the first two decades of the 1900s. The mines each supported small company towns for workers and families. In the 1950s, Wawa became an established village, mostly populated by individuals involved in the iron industry. The mines not only fueled the Algoma Steel plant and supporting industries at the Soo, operations also involved a number of hoists or lifts, crushers, an aerial tramway, firing plant, rail shipping, and Great Lakes ore freight. The Helen and Magpie mines helped to feed the industrialization of northern Ontario.

An initial gold rush in the area during the late 19<sup>th</sup> century brought prospectors looking for claims to stake. In 1897, one such prospecting party consisted of Jim Sayers, Ben Boyer, and Alois Goetz. Goetz recollected in a Letter to the Editor in the *Sault Evening Star* in 1925, that he named the local lakes Morgan, Boyer, and Sayers. The party found that Boyer Lake had a reddish tinge to the water, and exploring further, the group encountered a “five foot wall of dense, hard, black-looking rock which I thought was an iron ore. . . I knew it was an iron range.”<sup>1</sup> From 1897-1899 test pits were sunk the hill on which they staked their claims. And by 1900, this hill would become the Helen Mine.

An American developer and entrepreneur with the Lake Superior Power Company in S.S.M., Ontario by the name of Francis Hector Clergue was presented a possible gold sample from his timekeeper. Clergue immediately recognized it as red hematite. The two claimants, Ben Boyer and Jim Sayers, wanted \$500 for their claims. Clergue “took a two months option at \$50 . . . ‘That was the beginning of the Helen Mine and the steel plant at the Sault.’”<sup>2</sup> The Mine and subsequent refinery would propel Clergue as a leading industrialist of Sault Ste. Marie

Initial work at the Helen Mine, named after Clergue’s sister, began within a year of finalizing the claims. Nine pits were sunk and temporary housing camps were set up. Summer contracted workers were led by “Messers. Powell and Mitchell of Marquette, Michigan, to assess the size of the ore deposit.”<sup>3</sup> The deposit was found to have changed from limonite to hematite as the mine was opened. Additionally, a peculiar feature of Helen ore was a

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considerable quantity of granular iron pyrites. An account from the Ontario Legislative Assembly in 1919 mentions, “[The granular pyrite] which on being broken into mining, ran like water and in consequence had to be carefully shut off for fear of contaminating the shipping ore.”<sup>4</sup>

Transportation infrastructure followed the development of the Helen Mine. In 1899, the Algoma Central Rail Company was incorporated for the initial purpose of constructing a railway line from Michipicoten Harbour to the Helen mine.<sup>5</sup> In 1901, Algoma Steel was formed and construction of the current St. Mary’s River power canal was initiated.<sup>6</sup> Algoma had additionally invested into a deep water harbor and loading dock at Michipicoten Harbour, bid a railway line between the Helen Mine and Lake Superior, and constructed a pig iron refinery on the shores of the St. Mary’s River at Sault Ste. Marie, Ontario. Additionally, four steamships were purchased from England and thus formed the Algoma Central Steamship Lines, a Great Lakes freighter fleet.<sup>7</sup> A hydroelectric dam was constructed on the Michipicoten River, and was called the “run of the river dam”. This power station supplied the Helen and nearby gold mines with power.<sup>8</sup>

The soft-hematite ore from the Helen Mine began native Canadian steel production and spurred an iron refining industry in Sault Ste. Marie, Ontario. Up to 1900, Canadian steel refineries had relied on imported ore and, “[The] first shipment of Helen ore to blast furnaces in Midland, Ontario, was the first load of Canadian ore to a Canadian port. The date was July 1<sup>st</sup>, 1900.”<sup>9</sup>

During the Helen Mine’s early years of operation, the majority of miners came from Eastern Europe and the Scandinavian countries. Language differences seem to have posed major barriers to effective communication, and overall workplace safety. Prior to the construction of a company town of cottages, the miners stayed in four tent-camps, each with a capacity of seventy-five miners. An annual report to the Bureau of Mines in 1899 lists mine site infrastructure that included a steam plant or boiler house, cableway and hoist to a 175-ton-an-hour rock crusher, an inclined railway from the railway station to the camp, a lighting plant capable of powering 750 sixteen candlepower lights, an engine house, dining room, along with six steam driven rock drills.<sup>10</sup> Workplace accidents from 1901 to 1913 appear to have included deaths and injuries due to falling ore, unexpected dynamite explosions, and being struck by falling cable. Also among the list are other mining related injuries such as broken bones, bruises, scalp wounds, and falls.<sup>11</sup>

The Helen Mine operated from July 1900 to 1918, when in April, it is reported that “all recoverable straight sulphur and merchantable ore had been hoisted. Operations were stopped, the plant dismantled and closed down permanently.”<sup>12</sup> The Helen Mine temporarily closed in October due to labor shortages and all equipment was stored in preparation to reopen the mine later in the spring of 1919.<sup>13</sup> But the mine would wait until 1939, when iron ore bounties would be paid to producers, to once again begin producing iron ore.

A report from the Ontario Legislative Assembly mentions that in 1918, most of the Canadian ore exported was noduled, siderized ore from the Magpie Mine. This process was a form of beneficiation. Siderizing or sintering is the process of firing in order to drive off sulfur compounds and the fired ore was then formed into small nodules for shipment. Additionally, the report mentions mine production of 160,555 tons of roasted ore and shipment of 168,906 tons.<sup>14</sup> Also mentioned are the amounts of ore shipped from the Helen Mine. From a

stockpile was shipped 4,729 tons of pyrites to the acid plant at Sault Ste. Marie, with “27,592 tons of hematite were shipped to the Magpie mine” for beneficiation.

In 1909, three prospectors, “Blackington, Burke, and Gibson discovered a large iron deposit north of the Helen Mine. Algoma Steel Corporation purchased the property and began trenching the main exposed vein, which was of 60 feet wide and 2000 feet long. Diamond drilling indicated that there was a large quantity of ore, averaging at least 33-37% in iron content.”<sup>15</sup>

The Magpie ore was a low grade ore rich in sulfur called Siderite. A sintering plant was built nearby the tunnel entrance to fire the raw ore to drive off sulfur compounds before shipment. An electric hoist brought ore from the mine to the plant for roasting.

In 1911, a 12-mile rail spur from Magpie Junction to the Magpie Mine site was constructed to transport mine equipment and the smelter. In 1912, construction on the town and smelter began in earnest, as well as actual mine development. The nearby company town was intended to house single miners. “The mine site included the Magpie mine’s head frame, the sintering plant, boiler house, a large machine shop, a storehouse, assay office and chemical lab, as well as the hoist house.”<sup>16</sup> The company town provided accommodations in camps and cottages for about 300 people.<sup>17</sup> In 1911, the Magpie Mine had seventeen dwellings. The workforce, initially planned at 500 workers, consisted of about 250 people. By 1912, the company town became known as the Town of Magpie Mine, and a school was built for the instruction of sixty students. Thereafter, fifty more houses were constructed, and by 1915 the Town of Magpie Mine experienced a population growth—to 850 people.<sup>18</sup>

Initially electric power came from the Helen mine’s former powerhouse. Construction began on a nearby hydroelectric dam in 1906 at the Steephill Falls on the Magpie River. In 1913, Steephill Falls Hydroelectric Power Dam began operation and began powering both the Helen and Magpie mines and company towns. The Steephill dam continued operating until 1924 when it was abandoned. Interestingly, “[The dam] can still be viewed today as one of the only remaining sites of a flat buttress style dam in Canada.”<sup>19</sup>

In June of 1914, the Magpie mine survived a forest fire. In May, 1917, the miners struck for an eight hour work day, instead of a ten hour day. In 1918, following Spanish influenza’s passing through the mine, victims were buried in a small cemetery near the mine site, as well as alongside the Algoma rail tracks.

The Magpie mine closed in March 1921 following competition from iron mines south of the border, and with the depletion of hematite ore at the nearby Helen Mine. The local iron industry remained shuttered for the next 16 years.<sup>20</sup>

Interest in reopening the Helen Mine began in 1937 due to a Provincial government bounty designed to support domestic iron ore production. Also, a newly developed sintering process at a Wawa plant could beneficiate the lower grade siderite ore before shipping to the Algoma Plant. In 1937, the Iron Ore Bounty Act was passed by the Ontario Legislature, provided a bounty of two cents per unit of metallic ore in a ton of iron to be paid to producers of iron ores for a period of ten years.<sup>21</sup> The Act became effective on January 1, 1939.

Algoma Ore Properties, Limited needed to reconstruct the company town, as it had been razed by a forest fire in 1921. The company estimated the cost of reopening the mine along with new construction at 1.5 million Canadian Dollars. It was additionally estimated

that half a million tons of ore per year would be produced, with a finished sintered product of 300,000 tons. The site's pit would be opened, but by utilizing new mining practices, by 1950 all production from the mine would come from underground.<sup>22</sup>

Alongside the development of iron mining operations in 1939, the community at Wawa saw a revitalization with several effects. Following a boom-and-bust of local gold mines and after the closing of the Helen Mine in 1919, Wawa had become a sort of ghost town and buildings in the village numbered eight to twelve. The buildings' owners and residents were among the survivors of a 1921 forest fire. A post office, general store, a butcher, a restaurant, a hotel, along with two other "stores" constituted the initial, remaining amenities at Wawa City. Alongside mine redevelopment houses were moved from nearby localities. The rebirth of the Helen Mine resulted in construction of a road between the sintering plant, Wawa, and the mine. Following the completion of the power station on the Michipicoten River at High Falls, Wawa residents saw electrification. And an additional twenty-three company homes were built near the sinter plant and was known as Sinterville.<sup>23</sup>

When the new Helen Mine produced its first load of sintered ore in July, 1939, it was the only iron producer in all of Canada. However, it struggled in its early years through the Second World War. A lack of extending operations at the Helen Mine by management led to the development of additional, nearby iron ore bodies. The sintering plant required continuous operation and a steady source of ore in order to be profitable. An additional mine at the nearby Victoria ore body was proposed. The war years brought labor shortages, saw the cancelling of the iron bounty, and higher wartime operation costs.<sup>24</sup>

During the late 1940s, Algoma began employing an underground mining method with which to efficiently mine siderite ore. It added a Sink Float Plant and by 1947 was running year-round. By 1950, all ore produced at the Helen mine came from underground mining operations. In 1952, the Township of Michipicoten was incorporated and included the municipalities of Wawa, Michipicoten Harbour, Michipicoten River Village, Michipicoten High Falls, and the Helen Mine. The 1950s are described as Algoma's golden years and saw the development of nearby mines, with additional processing equipment as well as more permanent development in Wawa.<sup>25</sup>

Wawa expanded greatly due to the iron industry during the 1950s through the 1960s. Algoma provided the town with sewers, water, and electricity, as well as the construction and maintenance of roads throughout the district.<sup>26</sup> During the 1960s the Helen Mine and surrounding area sustained production by expansion into nearby iron deposits at the George W. MacLeod and Sir James Mines. The MacLeod Mine was located near Moran Lake and the Sir James Mine was to the northeast of Wawa near Lena Lake.

Algoma suffered during the recession of the early 1980s, laying off half of its mine and mill work force in July, 1982. Further workforce reductions followed in 1986. Through declining ore production and global market competition, Algoma Ore Division announced the closing of the Helen mine in 1996.<sup>27</sup>

As of December 2014, Essar Steel-Algoma Inc., current owner of Algoma Steel as well as a number of Wawa district mine properties, placed ten properties for sale within northern Ontario. The Helen and Magpie mine sites are currently for sale.<sup>28</sup>

Though Wawa and the surrounding area experienced a boom-and-bust gold rush initially, true riches came not from gold, but from iron ore. The Helen and Magpie Mines

helped develop Canadian steel through production of native Canadian ores as well as supported a developing steel industry. Northern Ontario and especially Sault Ste. Marie industrialized as relatively nearby iron deposits would be developed in order to fuel the Algoma Steel industry.

The author of this article would like to recommend further reading in Johanna (Morrison) Rowe, *Heart of a Mountain, Soul of a Town : the story of Algoma Ore and the town of Wawa*. A stable URL link is provided in the Notes section

## NOTES

<sup>1</sup> Alois Goetz, "Letter to the Editor," *The Sault Evening Star*, May 13, 1925. In Johanna (Morrison) Rowe, *Heart of a Mountain, Soul of a Town : the story of Algoma Ore and the town of Wawa*, privately published, Wawa, Ontario, 1999, found on Our Roots/ Nos Racines: Canada's Local Histories Online, online reproduction, accessed Dec. 2014, p.12-13, <http://www.ourroots.ca/e/page.aspx?id=910392> .

<sup>2</sup> (Morrison) Rowe, *Heart of a Mountain, Soul of a Town*, accessed Dec. 2014, p.15, <http://www.ourroots.ca/e/page.aspx?id=910392> .

<sup>3</sup> (Morrison) Rowe, *Heart of a Mountain*, p.16.

<sup>4</sup> Ontario Legislative Assembly, Sessional Papers, Legislature of the Province of the Province of Ontario, Part 2 (Google eBook), *MINES OF ONTARIO*, 1919, p. 31, accessed Dec. 2014, <http://books.google.com/books?id=YmBOAAAAMAAJ> .

<sup>5</sup> Wayne V. Brittain and R. L. Kennedy, "Algoma Central Railway", in *Old Time Trains*, 2003, accessed Dec. 2014, [http://www.trainweb.org/oldtimetrains/ACR/history\\_1.htm](http://www.trainweb.org/oldtimetrains/ACR/history_1.htm) .

<sup>6</sup> Johanna Rowe, "Power to the People- Plugging into Algoma's Rich Hydro History", Rowe Column, *Sault Star*, September 24, 2011, accessed Dec 2014, <http://www.saultstar.com/2011/09/24/power-to-the-people-plugging-into-algomas-rich-hydro-history-rowe-column> .

<sup>7</sup> Rowe, *Heart of a Mountain*, p.17.

<sup>8</sup> Rowe, "Power to the People", 2011.

<sup>9</sup> Rowe, *Heart of a Mountain*, p. 17.

<sup>10</sup> D.G. Boyd, "Michipicoten Mining Division," *Report of the Bureau of Mines*, Vol. VII, Second Part, (Toronto: Warwick Bro's & Rutler, Printers, 1900), p. 113. Quoted in (Morrison) Rowe, p.19

<sup>11</sup> Rowe, *Heart of a Mountain*, p. 20-21, 105.

<sup>12</sup> Ontario Legislative Assembly, p. 105.

<sup>13</sup> Rowe, *Heart of a Mountain*, p.13 .

<sup>14</sup> Rowe, *Heart of a Mountain*, p.13 .

<sup>15</sup> Yvan Charbonneau, "Magpie Mine: History, Ontario Ghost Towns", last revised Feb. 24, 2014, accessed Dec, 2014. <http://www.ghosttownpix.com/ontario/towns/magpie.html> .

<sup>16</sup> Charbonneau, "Magpie Mine: History".

<sup>17</sup> Rowe, *Heart of a Mountain*, p. 25.

<sup>18</sup> Alex Omanski, "The History of the Magpie Mine", alex omanski's blog (2), *minedat.org*, 16th Feb. 2014, accessed Dec. 2014, <http://www.mindat.org/blog.php/1908/The+history+of+Magpie+Mine> .

<sup>19</sup> Rowe, "Power to the People", 2011.

<sup>20</sup> Rowe, *Heart of a Mountain*, p. 26.

<sup>21</sup> Ontario Legislature, "The revised statutes of Ontario, 1937 : being a revision and consolidation of The revised statutes of Ontario, 1927, and the subsequent public general acts of the Legislature of Ontario", Chapter 48, Section 1, [http://archive.org/stream/v01revisedstat1937ontauoft/v01revisedstat1937ontauoft\\_djvu.txt](http://archive.org/stream/v01revisedstat1937ontauoft/v01revisedstat1937ontauoft_djvu.txt) .

<sup>22</sup> Rowe, *Heart of a Mountain*, p. 29-30, 45-46.

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<sup>23</sup> Rowe, *Heart of a Mountain*, p. 37-40.

<sup>24</sup> Rowe, *Heart of a Mountain*, p. 43-45.

<sup>25</sup> Rowe, *Heart of a Mountain*, p.45-46, 63, 67.

<sup>26</sup> Rowe, *Heart of a Mountain*, p.59.

<sup>27</sup> Rowe, *Heart of a Mountain*, p. 97-103.

<sup>28</sup> Zsuzsanna Magyarosi, *Summary Report, Magpie Property, Leclaire Township, Ontario, Canada*, [for Essar Steel], March 13, 2013, accessed Dec. 2014, [http://minelistings.com/wp-content/uploads/2013/02/Essar\\_Magpie\\_13Mar2013.pdf](http://minelistings.com/wp-content/uploads/2013/02/Essar_Magpie_13Mar2013.pdf) , and 10 Iron Properties For Sale- Ontario, Canada, Essar Steel Algoma Inc's Iron Properties, accessed Dec 2014, <http://minelistings.com/mines-for-sale/essar-steel-algoma-incs-iron-properties-for-Sale> .